



FCC 9-1-1 Briefing Location Technology

September 27, 2007



Agenda

▀▀ Location Technology – Next Generation

- Public Safety Location Requirements
- Convergence Impacts On E9-1-1
- Timing: 5 – 7 Year Plan

▀▀ Enterprise IP/PBX - MLTS

▀▀ Q & A



Timing: 5 – 7 Year Plan

Data Element	Responsibility	1 st Milestone (2 Years)	2 nd Milestone (5 Years)	Full Deployment
Call Back # or Equivalent	Carrier	100%	100%	NA
End User Name	Carrier	30%	100%	NA
Service Provider Name/NENA ID	Carrier	100%	100%	NA
Dispatchable Address: Address of Importance	Carrier	40%	100%	
Type of Location	Carrier	100%	100%	NA
Dispatchable Address: Dynamically Defined	PSAP	NA	70%	7 Years
Type of Address	Carrier	100%	100%	NA
Wireless Base- station address	Carrier	100%	100%	NA
XY & Uncertainty	Carrier	70%	95%	NA
XY& Z & Uncertainty	Carrier	5%	80%	NA

X/Y/Z is NOT Enough

- ▀▀ We still need Addresses
 - In a fixed address location, it is better to dispatch to an address than an X/Y/Z
- ▀▀ X/Y/Z location technologies can assist in validating addresses and provide valuable secondary data.
- ▀▀ Reverse Geo-Coding is not the answer for the foreseeable future.
 - Without highly accurate base maps, reverse Geo-coding often produces misleading or imaginary locations.
- ▀▀ X/Y/Z enables E9-1-1 mobility in the outdoor use case.
- ▀▀ The Z axis is much more difficult to accurately determine than X/Y



New Technologies Blurring the lines between Fixed and Mobile Today

UMA

- Special GSM phones utilize internet based WiFi access points to place calls that are seamlessly integrated with Macro GSM system
 - Network has ability to recognize separate access points that could be associated with an MSAG address that could be passed to the PSAP.
 - Radius often around 100'

Femtocell

- Standard Cellular phones access special customer provisioned cells using the customers broadband access as backhaul to the carrier
 - Most Femtocells determine X/Y for standard operations.
 - Radius often around 100'

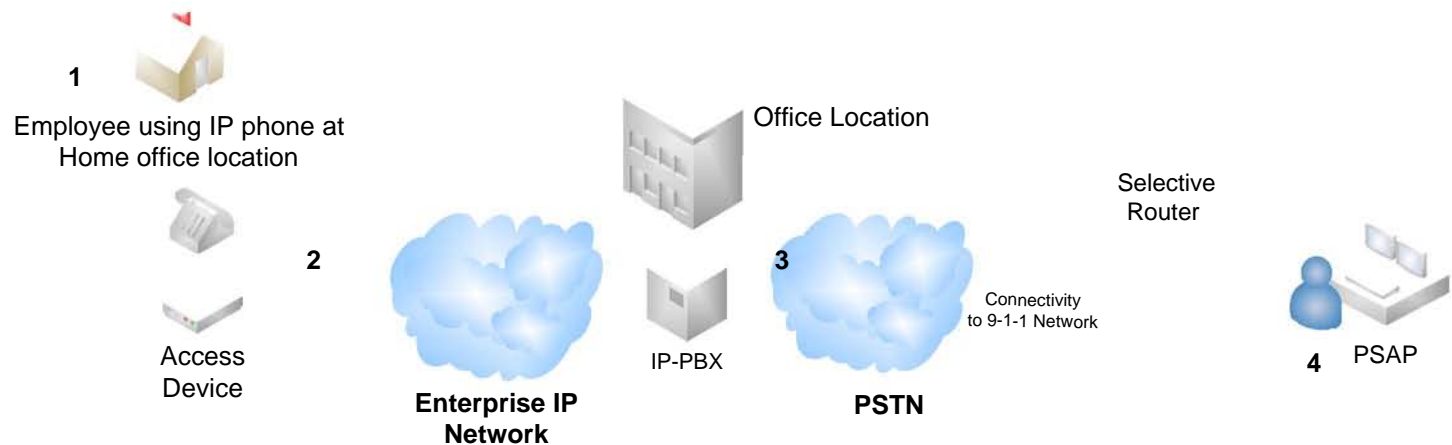
Enterprise IP/PBX - Existing Rule Summary

- Only 15 States have State Laws or PUC rules
 - Alaska
 - Virginia
- Lack of clear guidelines – business, residential, multi tenant
- No Consistent Mandates
- Numerous loopholes
- FCC Rule Impacts
 - Dockets 94-102; 05-196; 07-114
 - Need FCC Leadership and Clarification



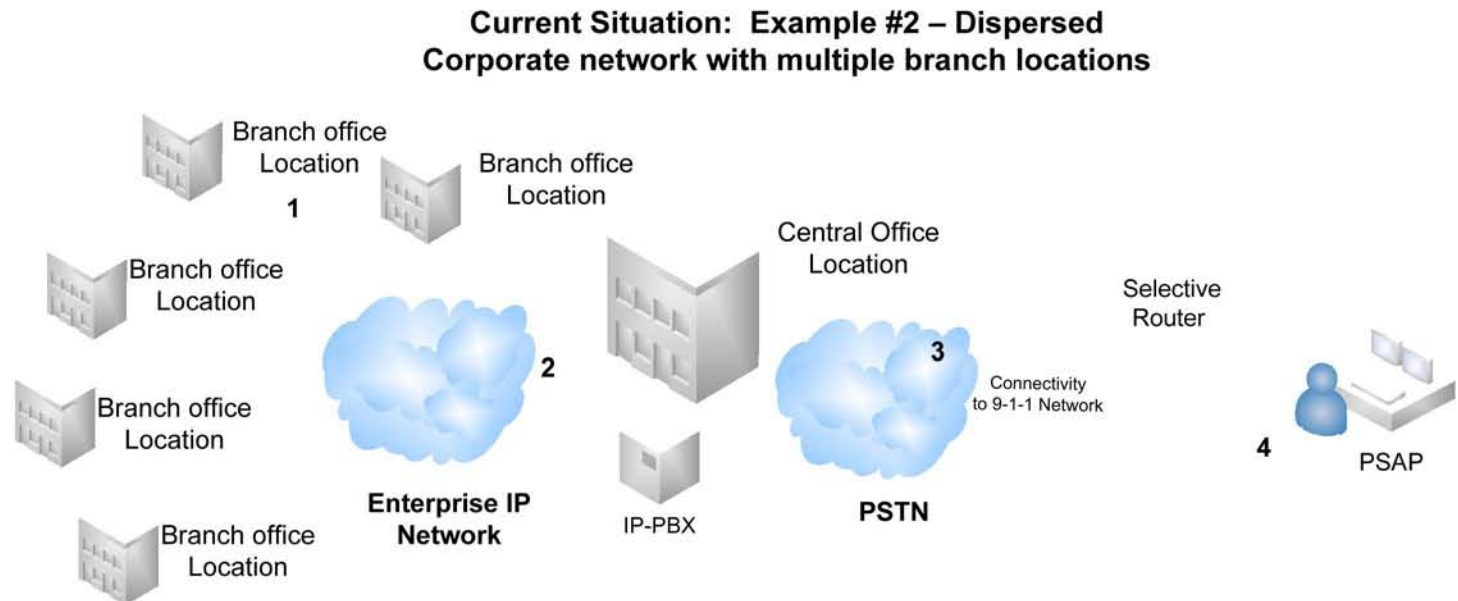
E911 in a Current IP-PBX environment: Home office location

Current Situation: Example #1 – Employee working at home location



- 1** Employee uses company assigned IP phone at home location
(Home location is not in the same area as the office location and is served by different PSAP)
- 2** Employee uses IP phone to access corporate network in order to make voice calls (including 911)
- 3** IP-PBX connects to PSTN to terminate the call
- 4** In the case of a 9-1-1 call, the PSAP routing is based on the office location, not the location of the caller, therefore emergency response is directed to the wrong location

E911 in a Current IP-PBX environment: Dispersed branch office locations



- 1 Widely dispersed branch offices are connected to a central/regional IP-PBX for voice/data (each branch location removes local trunking to reduce cost)
- 2 All voice calls (including 911) that originate at a branch location are routed to the central IP-PBX
- 3 IP-PBX connects to PSTN to terminate the call
- 4 In the case of a 9-1-1 call, the PSAP routing is based on the Central office location, not the location of the caller at a branch office, therefore emergency response is directed to the wrong location